Application No. 10/810,505
Submission under 37 C.F.R. 1.114

Docket No.: 5271-0113PUS1 Art Unit 1795

1-19. (Cancelled)

20. (Currently Amended) A non-aqueous secondary battery comprising:

a negative electrode comprising a collector, and an intermetallic compound as an active

material layer capable of occluding/desorbing lithium, as an active material layer and a

conductive layer on the collector;

a positive electrode; and

a non-aqueous electrolyte, wherein

the intermetallic compound contains at least one kind of element A selected from Sn, In,

Ge, Ga, Pb, Al, Sb, and Si, and an element X that does not substantially react with Li, and

[[a]] the conductive layer is provided disposed between the active material layer and the

collector, contains at least one kind of element selected from Ti, Ni, Zr, W and Ag, and has a

thickness of 0.05 to 0.5 µm.

wherein a main element of the conductive layer is different from a main element of the

intermetallic compound.

21. (Previously Presented) The non-aqueous secondary battery according to claim 20,

wherein, in X-ray diffraction measurement with a CuKα-ray of the active material layer, highest

peak intensities of diffraction lines derived from the intermetallic compound and the element A

are represented by I_a and I_b , respectively, and an intensity ratio I_b/I_a is 0.1 or less.

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22-24. (Cancelled)

25. (Previously Presented) The non-aqueous secondary battery according to claim 20,

wherein the element X is at least one kind of element selected from Cu, Ni, Fe, Mn, Co, Cr, Mo,

W, Ti, and Zr.

26. (Previously Presented) The non-aqueous secondary battery according to claim 20,

wherein the element X is at least one kind of element selected from Cu, Ni, and Fe.

27. (Previously Presented) The non-aqueous secondary battery according to claim 20,

wherein the intermetallic compound is a NiAs type intermetallic compound belonging to a space

group P6y/mmc.

28. (Original) The non-aqueous secondary battery according to claim 27, wherein the

NiAs type intermetallic compound is Cu₆Sn₅.

29. (Previously Presented) The non-aqueous secondary battery according to claim 21,

wherein a highest peak intensity of a diffraction line derived from an intermetallic compound

phase other than the intermetallic compound capable of occluding/desorbing lithium is

represented by I_c , and an intensity ratio I_d/I_a is 0.05 or less.

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30. (Previously Presented) The non-aqueous secondary battery according to claim 20,

wherein a thickness of the active material layer is 20 μm or less.

31. (Previously Presented) The non-aqueous secondary battery according to claim 20,

wherein a thickness of the active material layer is 10 µm or less.

32. (Previously Presented) The non-aqueous secondary battery according to claim 20,

wherein the collector is composed of at least one kind of element selected from Cu, Ni, Fe, and

Ti, and an alloy thereof.

33. (Currently Amended) A non-aqueous secondary battery comprising:

a positive electrode;

a non-aqueous electrolyte; and

a negative electrode comprising a collector, and an intermetallic compound as an active

material layer that occludes/desorbs lithium as an active material layer, and a conductive layer on

the collector,

wherein a conductive layer is provided disposed between the active material layer and the

collector, contains at least one kind of element selected from Ti, Ni, Zr, W and Ag, and has a

thickness of 0.05 to 0.5 µm, and

wherein a main element of the conductive layer is different from a main element of the

internetable-compound;

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wherein the intermetallic compound is a single phase and contains at least one kind of element A selected from Sn, In, Ge, Ga, Pb, Al, Sb, and Si, and an element X that does not substantially react with Li, wherein X is at least one kind of element selected from Cu, Ni, Fe, Mn, Co, Cr, Mo, W, Ti, and Zr, and

wherein in X-ray diffraction measurement with a $CuK\alpha$ -ray of the active material layer, highest peak intensities of diffraction lines derived from the intermetallic compound and the element A are represented by I_a and I_b , respectively, and an intensity ratio I_b/I_a is 0.1 or less, and

wherein the main constituent element of the conductive layer is at least one kind of element selected from Ti, Ni, Zr, W, and Ag.

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